

1. Optical device for helmet viewfinder presenting a collimated image to a user, comprising an imager (20) and an off-axis spherical concave mirror (1), characterized in that it comprises optical means for correcting the distortion of the image presented to the user which is due to the off-axis spherical concave mirror (1), said means comprising a diffractive field mirror (21).

2. The device as claimed in claim 1, characterized in that the diffractive field mirror (21) is situated in the vicinity of an intermediate image (25, 27) formed by said optical device, vicinity whose extent is limited to the maximum distance of this image beyond which the resolution of the image at the center of the field of the device is degraded.

3. The device as claimed in claim 2, characterized in that the diffractive mirror (21) is placed said maximum distance from the intermediate image (25, 27).

4. The device as claimed in one of the preceding claims, characterized in that the diffractive field mirror (21) is a digital plane numerical hologram with discrete variations.

5. The device as claimed in one of claims 1 to 3, characterized in that the diffractive field mirror (21) is a plane numerical hologram with continuous profile.

6. The device as claimed in either of claims 4 and 5, characterized in that the face of the support of the diffractive field mirror (21) in which the hologram is made is not plane.

7. The device as claimed in one of claims 1 to 3, characterized in that the diffractive field mirror (21) is a volume hologram recorded in a photosensitive material.

8. The device as claimed in claim 7,  
characterized in that the photosensitive material is on  
a transparent support of variable optical index.

9. The device as claimed in claim 7,  
5 characterized in that the photosensitive material is on  
a transparent support of variable thickness.

10. The device as claimed in one of the  
preceding claims, characterized in that it comprises a  
power group (22) placed between the spherical mirror  
10 (1) and diffractive mirror (21) which focuses a first  
intermediate image (25) in proximity to said spherical  
mirror (1) onto a second intermediate image (27).

11. The device as claimed in claim 10,  
characterized in that the diffractive field mirror (21)  
15 is situated in the vicinity of the second intermediate  
image (27).

12. The device as claimed in one of the  
preceding claims, characterized in that it comprises  
one or more optical power groups (22) or optical relay  
20 groups (29) placed in the path of the rays between the  
imager and the spherical mirror, upstream and/or  
downstream of the diffractive mirror (21), this or  
these groups comprising one or more lenses at least one  
25 of which is convergent so as to give an aperture of the  
beams incident on the diffractive mirror which is very  
small in comparison with the aperture of the beams  
incident on the spherical mirror.

13. The device as claimed in one of the  
preceding claims, characterized in that the spherical  
30 mirror (1) is semi-transparent.